REMARKS

Claims 1-25 are pending in this application. By this Amendment, claims 1, 11 and 19 are amended. Claim 19 is amended to correct a typographical error; support for this amendment can be found in claim 19 as originally filed. Claims 1 and 11 are amended to more clearly set forth the limitations of the claimed invention. Support for the amendments to claims 1 and 11 can be found in the specification as originally filed, for example, at paragraphs [0015] and [0039]. Thus, no new matter is added by these amendments.

The Office Action rejects claims 1-3, 9-13, 15-18 and 21-25 under 35 U.S.C. §102(b) over U.S. patent 5,610,117 to Horiuchi et al. The Office Action rejects claims 1-3, 7, 8, 11-13, 15 and 19-23 under 35 U.S.C. §102(b) over U.S. patent 5,155,077 to Montreuil et al. The Office Action rejects claims 1-10 under 35 U.S.C. §102(b) over U.S. patent 5,989,457 to Seshan et al. The Office Action rejects claims 1-5, 7, 8, 11-15, 19 and 21-23 under 35 U.S.C. §102(e) over U.S. Patent Application 2002/0016259 to Yoshikawa. Because these rejections are similar, they are addressed together herein. Applicants respectfully traverse these rejections.

Independent claim 1 sets forth a "catalyst for purifying an exhaust gas, comprising: zirconia particles; and a transition metal layer covering at least a part of a surface of said zirconia particles in a lamellar manner, wherein the zirconia particles and the transition metal layer have been calcined at 800°C or more in an inert gas atmosphere or a nitrogen gas atmosphere." Independent claim 11 sets forth a "catalyst for purifying an exhaust gas, comprising: a co-catalyst powder including zirconia particles, and a transition metal layer covering at least a part of a surface of the zirconia particles in a lamellar manner; and at least one member selected from the group consisting of a titania powder and a zeolite powder, wherein the zirconia particles and the transition metal layer have been calcined at 800°C or more in an inert gas atmosphere or a nitrogen gas atmosphere." Claims 2-3 and 5-

10 depend, directly or indirectly, from claim 1, and claims 12, 13, 15-18 and 21-25 depend, directly or indirectly, from claim 11.

The cited references are drawn to catalyst compositions for gas purification. The Horiuchi catalyst contains a catalytic component for diesel exhaust purification comprising iron and/or manganese oxides and a refractory inorganic oxide, such as titania or zirconia, and optionally, an alkaline earth element or rare earth element, and a catalytic component comprising at least one noble metal selected from the group consisting of palladium, platinum, and rhodium and a refractory inorganic oxide and, optionally, copper deposited in the form of a single layer on a refractory three-dimensional structure. The Montreuil catalyst composition for purification of automotive exhaust gas comprises a transition metal containing zeolite phase and a transition metal containing oxide phase. The Seshan catalyst composition for synthesis gas production comprises a thermally stabilized zirconium oxide coated with platinum and/or nickel, and optionally combined with an additional metal. The Yoshikawa catalyst composition for exhaust gas purification contains a complex oxide of zirconium and magnesium and/or cobalt with a zeolite, and optionally, cerium.

In contrast to the specific requirements of claims 1 and 11, none of the specific examples of Horiuchi, Montreuil, Seshan and Yoshikawa disclose calcining the catalyst at a temperature of at least 800°C. Rather, while the broad disclosures of the cited references discuss calcining the catalyst at temperatures up to 900°C, none of the references specifically teach calcining the catalyst at a temperature of at least 800°C in specific embodiments. For example, the examples of Horiuchi describe calcining the catalyst at temperatures ranging only from 500°C to 700°C, for one hour. The examples of Montreuil describe calcining the catalyst at only 600°C. The examples of Yoshikawa describe calcining the catalyst at only 500°C-550°C. The examples of Seshan describe calcining the catalyst composition at only 650°C, and a comparative example of Seshan describes calcining a catalyst at 850°C, but

states that such a catalyst is not useful for practical applications. See Seshan at col. 9, lines 1-14. Thus, the cited references to not disclose, in specific embodiments, a catalyst for purifying an exhaust gas, wherein the zirconia particles and the transition metal layer have been calcined at 800°C or more, as in claims 1-25.

Still further, Horiuchi, Montreuil, Seshan and Yoshikawa do not disclose the atmosphere at which the catalyst is calcined. Claims 1 and 11, in contrast, require calcination to take place in either an inert atmosphere or a nitrogen gas atmosphere. Thus, the cited references to not disclose, in specific embodiments, a catalyst for purifying an exhaust gas, wherein the zirconia particles and the transition metal layer have been calcined in an inert gas atmosphere or a nitrogen gas atmosphere, as in claims 1-25.

Still further, Horiuchi discloses that the iron oxide and manganese oxide are dispersed on the zirconia powder. See, for example, Horiuchi, col. 9, lines 20-24. Thus, according to the description in the disclosure of Horiuchi, the iron and/or manganese oxides are merely loaded onto the zirconia. In contrast, the transition metal layers of the catalysts set forth in claims 1 and 11 form a layer covering at least part of the surface of the particles in a lamellar manner.

Likewise, Montreuil discloses that the iron oxide and manganese oxide are dispersed on the zirconia powder. Thus, according to the description in the disclosure of Montreuil, the iron and/or manganese oxides are merely loaded onto the zirconia. In contrast, the transition metal layers of the catalysts set forth in claims 1 and 11 form a layer covering at least part of the surface of the particles in a lamellar manner.

Accordingly, Horiuchi, Montreuil, Seshan and Yoshikawa do not disclose, in specific embodiments, each and every element of the claimed invention. Thus, claims 1-3, 5-13, 15-18 and 21-25 are patentable over Horiuchi; claims 1-3, 7, 8, 11-13, 15 and 19-23 are patentable over Montreuil; claims 1-10 are patentable over Seshan; and claims 1-5, 7, 8,

11-15, 19 and 21-23 are patentable over Yoshikawa. Reconsideration and withdrawal of these rejections are respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-25 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

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